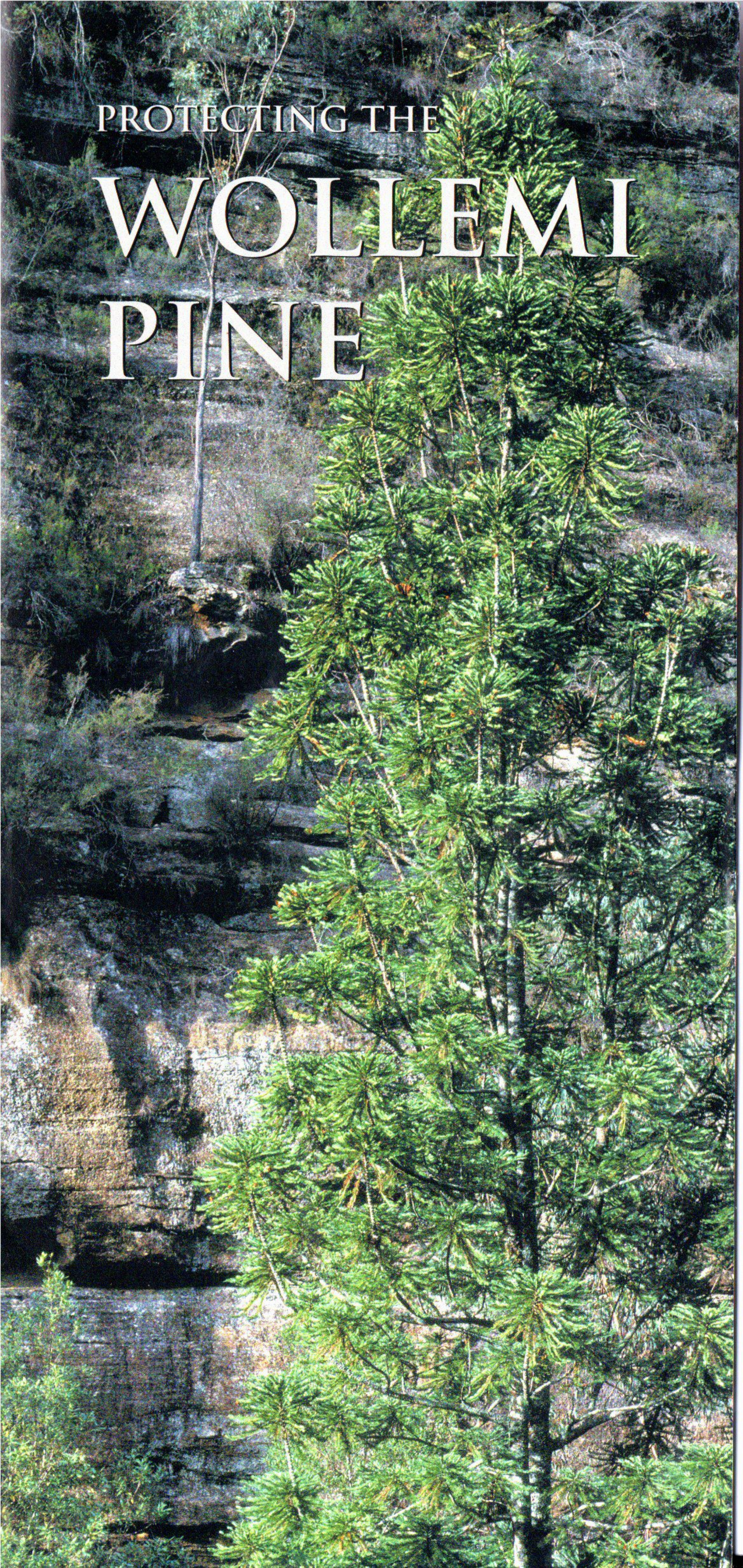
PROTECTING THE WOLLEMI PINE



PROTECTING THE WOLLEMI PINE

Where is the Wollemi Pine found?

The Wollemi Pine (*Wollemia nobilis*) is one of the world's rarest plants, with less than 100 adult trees known to exist in the wild. Protected by the walls of an almost impenetrable sandstone gorge, the Pines were discovered in Wollemi National Park, north-west of Sydney in 1994.

Why is it so special?

What is most astonishing is that a 40-metre-high tree thought to be extinct millions of years ago was discovered on Sydney's doorstep. Fossils indicate that the Wollemi Pine's ancestors once grew across Australia and Antarctica. The Pine is now found in the Greater Blue Mountains World Heritage Area and nowhere else in the world. It is the only living species in the genus *Wollemia* and its closest relatives include the Kauri Pines.

What is the biggest threat to the trees?

Humans pose the greatest threat to the trees' survival. These threats include arson and the inadvertent introduction of weeds and plant disease. A fungal disease called *Phytophthora* could accidently be taken into the site. Once the disease is washed into the soil, it attacks the roots of plants and they quickly die of starvation. There is no known cure.To stop *Phytophthora* and other diseases from being transmitted to the site the area is closely monitored. Visits by scientists and rangers are carefully planned and they sterilise all shoes and equipment in a disinfectant solution.

Can I buy a Wollemi Pine?

In March 1999, the Queensland Forestry Research Institute and Birkdale Nursery (a large, specialist plant nursery) were selected to commercialise the Wollemi Pine on behalf of the Royal Botanic Gardens and Domain Trust and the NSW National Parks and Wildlife Service. The Pines should be available to home gardeners in 2005. For more information see www.wollemipine.com.

www.rbgsyd.nsw.gov.au
www.nationalparks.nsw.gov.au

See a grove of REAL LIVE Wollemi Pines!

Pines can be seen at the Royal Botanic Gardens, Mount Annan Botanic Garden and Taronga Zoo. However, the closest place to the Wollemi National Park where Pines are on display is Mount Tomah Botanic Garden on the Bells Line of Road near Mount Wilson. The tallest tree there is now almost four metres high.

Opening hours October – February: 10 am – 5 pm, March–September: 10 am – 4 pm. Closed Christmas Day only. **Entry fees apply.**

PROTECTING THE WOLLEMI PINE

Why You Shouldn't Visit Wollemi Pines in the Wild

- Your footwear can carry soil diseases and/or seeds of weed invaders that could eventually kill all Wollemi Pines in the wild.
- You could trample tiny seedlings that might be destined to become the last of the naturally occurring Wollemi Pine trees in 400 years time.
- Picking off parts of the Wollemi Pine as souvenirs damages critical growth points and exposes the remaining plant to disease.
- Your actions might start a catastrophic fire with devastating consequences for all the Wollemi Pine sites.
- Even if you try to maintain the secrecy of the site, the very fact you have been there may be enough to encourage others to try the same.
- You don't need to. You can easily see cultivated Wollemi Pines in the Sydney, Mount Annan and Mount Tomah Botanic Gardens.

You don't want to be single-handedly responsible for wiping out the plant world's equivalent of a living dinosaur, do you?

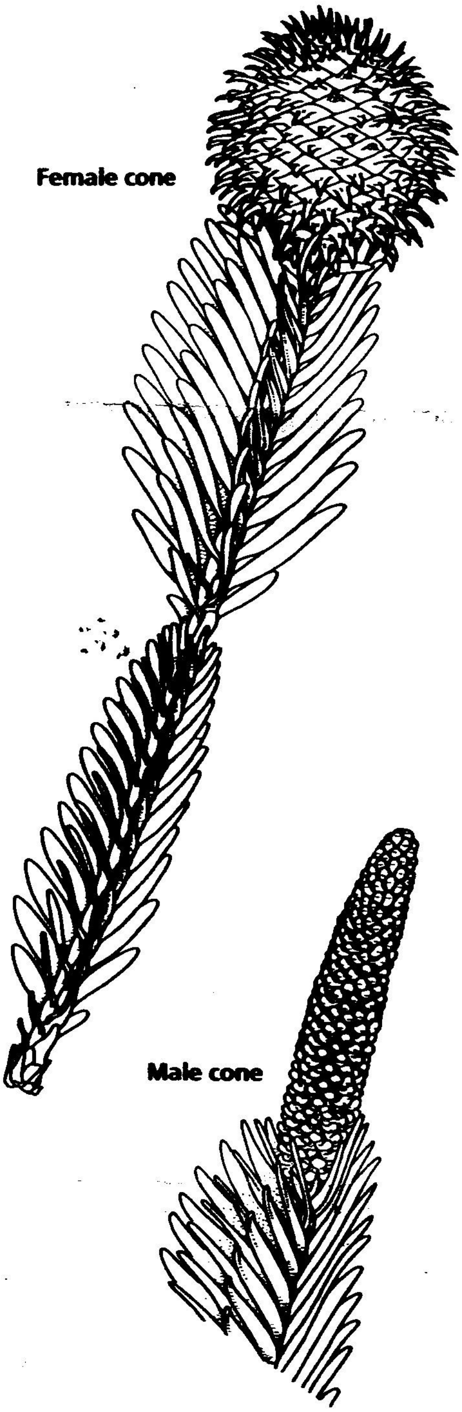
Royal
Botanic
Gardens &
Domain
Trust

Working together to protect the natural habitat of the Wollemi Pine.

PROTECTING THE WOLLEMI PINE

Wollemi Pine

Fact Sheet



Once ripe, the Wollemi Pine's female cones fall apart and release their seeds. Female cones always develop on branches above the male cones.

The Wollemi Pine (*Wollemia nobilis*) is a conifer that grows to a height of 35 metres with a trunk diameter of over one metre. The leaves vary from bright lime green when young to yellow-green as they mature. Its bark is particularly unusual, looking very much like bubbling chocolate and is quite different from the bark of other related species. The Wollemi Pine's closest living relatives are the Norfolk Island Pine, Bunya Bunya Pine, Hoop Pine, Monkey Puzzle Pine and Kauri Pine, all members of the family *Araucariaceae*.

Like its closest living relatives, the Wollemi Pine is bisexual with both female and male reproductive cones on the same tree. The male and female cones are borne on separate branches at the very tips. The male cones are lower down the tree on older branches. The seeds are winged.

Why is it so important?

The Wollemi Pine is a 'living fossil'. Its discovery is particularly significant since it belongs to a new genus of plants previously known only as fossils that date back to the age of dinosaurs, some 150 million years ago. It is one of the world's rarest species with only 38 adult trees known in two small stands.

The discovery of the Wollemi Pine emphasises that conservation areas are extremely valuable in the preservation of all plants and animals, especially endangered species. The Pine has already yielded the known anti-cancer chemical taxol, previously associated mainly with Yew trees from the Northern Hemisphere. Who knows what other extraordinary plants and animals – and cures – are still waiting to be discovered?

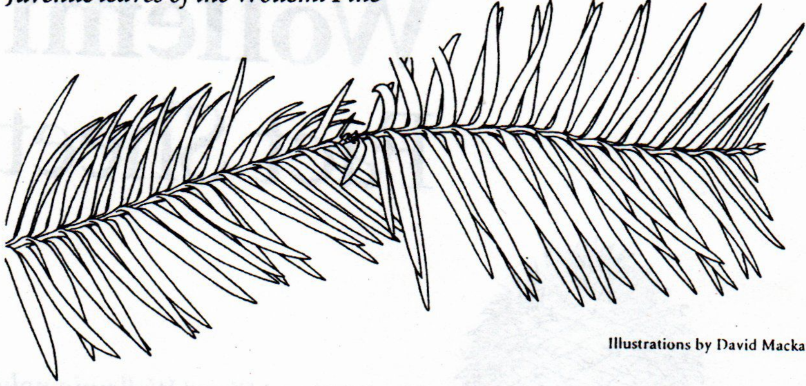
The Wollemi Pine's habitat

Two small groves of seedlings and mature trees are growing about 150 kilometres north-west of Sydney, within the boundaries of the Wollemi National Park. The Park, which contains the largest wilderness in New South Wales, is a very rugged mountainous region of gorges, cliffs and undisturbed forest. The Wollemi Pines are growing on wet ledges in a deep, sheltered rainforest gorge.

How the Wollemi Pine was discovered

Like many notable finds, the Pines were discovered by chance. In August 1994, David Noble, a NSW National Parks and Wildlife Service officer, was bushwalking in the Wollemi National Park when he saw a grove of trees that he did not recognise immediately. When asked to identify the

Juvenile leaves of the Wollemi Pine



Illustrations by David Mackay

For more information, contact the Royal Botanic Gardens Sydney on (02) 9231 8111 or the NSW National Parks and Wildlife Service on (02) 9585 6333.

specimen, Wyn Jones, a NSW National Parks and Wildlife Service senior naturalist, soon realised that it was indeed an unidentified plant. Wyn, with botanist Jan Allen, first compared the tree with other cone-bearing plants (conifers) and realised that a new genus had been found. Botanists at the Royal Botanic Gardens in Sydney were consulted and confirmed that it was a new genus.

How old are the Pines?

Nobody really knows, but some of them may have been around before the Roman Empire. The older Wollemi Pines have multiple trunks of different ages and, in many cases, the original trunk is long gone. Scientists estimate that some of the trees may be between 500 and 1000 years old.

The role of the NSW National Parks and Wildlife Service and Royal Botanic Gardens

A research program, coordinated by the NSW National Parks and Wildlife Service (NPWS) and the Royal Botanic Gardens (RBG), is investigating the ecology and biology of the Wollemi Pine.

The NPWS is studying the ecosystem and preparing a conservation strategy to protect the Pines from a natural disaster such as fire, trampling by human feet, diseases and harvesting by collectors. One of the NPWS' most important policies is to minimise visits to the site, since the trees' very survival depends upon their isolation.

The RBG is investigating the Wollemi Pine botanically and horticulturally. A collection of Wollemi Pines grown from seeds and cuttings has been established at Mount Annan Botanic Garden so that the Pines in the wild are disturbed as little as possible. The structure of leaves, seeds, pollen and bark, and the plants' genetic makeup, are all being studied.

Given the very limited supply of mature seed available, alternative methods of propagation are being investigated. If experimental work on tissue culture is successful, in two or three years the RBG may be able to make the Wollemi Pine available, first to botanical gardens throughout the world and then more widely.

ROYAL
BOTANIC
GARDENS
SYDNEY

NSW
NATIONAL
PARKS AND
WILDLIFE
SERVICE